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Effects of connecting reading and writing and a checklist to guide the reading process on EFL learners' learning about English writing

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Abstract

This paper reports a quasi-experiment investigating the effects of connecting reading and writing and a checklist to guide the reading process on EFL learners' learning about writing. In this research, ways of reading which are likely to promote the development of writing ability were sought and operationalized into checklist questions for EFL reading instructions. Two groups of college students who read a text with and without the checklist were compared. The results show that connecting reading and writing has positive effects and that the checklist helps students consider genre and efficiently integrate the reading and writing processes.

*Keywords:*Reading-to-write; checklist; cognitive modelling; EFL reading instruction; EFL writing

I. Introduction

How can we help EFL learners develop their writing ability? Recently the importance of reading in developing writing ability has been acknowledged (e.g. Carson and Leki, 1993; Hirvela, 2004). Krashen (1984) claims that "it is reading that gives the writer the 'feel' for the look and texture of reader-based prose" (p.20). Carson and Leki (1993) assert, "reading can be, and in academic settings nearly always is, the basis for writing" (p.1). According to Ferrris and Hedgcock (2005), reading becomes the basis of writing because the information acquired through reading contains print-encoded messages as well as clues about how the messages' grammatical, lexical, semantic, pragmatic, and rhetorical constitutes combine to make the message meaningful (p.31). Hirvela (2004) contends that reading supports writing through "meaningful input". Meaningful input are not only facts but specific components that constitute writing, and how writers think through the problems they are addressing (Bolch and Chi, 1995). According to Hirvela (2004), reading and writing abilities share various constructs such as rhetorical structure, linguistic features of writing, and examining lexical as well as stylistic characteristics of writing (p.115). Correlational studies suggest 25% to 50% overlap between reading and writing abilities (Tierney and Shanahan, 1991).

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Regardless of the above acknowledgement, it is not always the case that good readers develop into good writers. Especially in EFL context, many students develop into very competent readers without developing their writing ability to the same degree. The 25% to 50% overlap between reading and writing abilities in Tierney and Shanahan's study (1991) also indicates that there is room for differences between the two abilities. Grabe (2001) points out two important differences between reading and writing: deliberateness and focus of reflection. Specifically, while reading requires more automaticity of subprocesses, writing requires more deliberate awareness. While the main goal of reading is to reflect on meaning, reflecting on language is very important in writing to make sure that ideas are expressed appropriately. Thus, while reading and writing share constructs and may support each other, there are differences between the two abilities and reading ability does not always transfer to writing ability.

What we learn from reading practice, however, may differ depending on our purpose of reading and reading tasks involved. The two main differences between reading and writing which are pointed out by Grabe (2001) are located in the most common way of reading, i.e., reading for comprehension. Some other ways of reading may have the characteristics which are missing in reading for comprehension and yet important in writing. For example, Hayes (1996) compared reading for revision with reading for comprehension and found that when people read to revise, writers pay close attention to language form for the problems and effectiveness. In addition, reading for revision occurs in the process of text production. Therefore, readers are forced to see the text from a writer's perspective. Anticipating writing (output) may itself shift the reader's attention toward important input for their own output (e.g. Yoshimura, 2006). "Mining" advocated by Greene (1993) may also shift readers' attention toward useful input for their writing. According to Greene (1993), mining is "part of an ongoing effort to learn specific rhetorical and linguistics conventions" from reading and make them "their own repertoire for writing on different occasions". (p.36). Thus, reading behaviour and what can be learned from reading may change depending on the characteristics of a specific reading task, and some ways of reading have characteristics which tend to be missing in reading for comprehension but which is important in writing. If these characteristics are integrated and implemented in reading instructions, then learners may learn important input for their writing from the instructions.

In this research, a checklist which implements ways of reading which are likely to promote the development of writing ability is created (Appendix 1) and the effects on EFL learners' learning about English writing are investigated empirically. The checklist is used in a reading task which is combined with writing tasks.

II. The checklist

The following explains what were considered in creating the checklist.

1. Possible users

The target users of the checklist for the current study are Japanese university students who are studying English as a foreign language. They do not have sufficient language proficiency and are not very familiar with English rhetorical conventions. And yet, they need to learn to write academic papers in English in a relatively short period of time.

2. Roles the checklist should play in EFL reading

The main role the checklist should play is to guide learners' reading process so that they can learn about English writing from reading. Cumming (1995) suggests the importance of "cognitive modeling" (p. 383). According to Cumming, cognitive modeling involves demonstrating and practicing the kinds of thinking process that experts use so that learners can become aware of, and can practice, the complex mental activities that characterize expert processing. The quality of thinking processes that learners are encouraged to perform during their reading affects their reading comprehension and their learning of the rules and conventions of English writing. Therefore, the most important role the checklist should play is as an aid to cognitive modeling.

However, as Smagorinsky (1992) warns, the expert thinking process is not acquired in a brief exposure to such thinking, but requires repeated practice. Learners need to internalize the questions and directions in the checklist and apply them in their academic reading practice repeatedly until they acquire such thinking. In order to do that, the questions and directions in the checklist should not be too many or too complicated. Therefore, though many more questions or directions could have been included in the checklist, the total number was limited as few as possible.

3. What to include in the checklist

The questions or directions that were included in the checklist were chosen through integrating and implementing the discussions of previous reading and writing research (e.g. Carrell and Conner, 1991; Cumming, 1989; Grabe, 2001, 2003; Grabe and Stoller, 2002; Greene, 1993; Harklau, 2002; Hayes, 1996; Hyland, 2004; Krashen, 1984; Kennedy and Smith, 2006). The basic idea is that the checklist needs to be based on basic reading process, and yet has characteristics of expert reading and writing, and most importantly characteristics of ways of reading that are likely to support learning about English writing.

The genre is specified as academic reading. Exposition and argument are typical of academic genres and therefore questions or directions are intended to aid in the processing of texts of these genres. The reading process is divided into three stages according to the limitation of working memory capacity (e.g. VanPatten, 1990). Research by VanPatten (1990) reveals that it is difficult to attend to both meaning and language form in incidental learning mode. In such a case, adults tend to prioritize meaning over language form. By dividing the process into different stages, learners are guided to pay attention to different aspects of texts. The purpose of each stage is to help readers pay attention to the macrostructure, details, and language form. Before and after the actual reading, learners are guided to conduct an overview of the text and to identify the rhetorical context of the reading text and the texts they are going to create. Both top-down and bottom-up process in reading are combined to aid learners' efficient processing of reading material.

In the checklist, the question and the direction in the *before you read* section are from top-down models of reading (e.g. Grabe and Stoller, 2002, p.32), intended to encourage learners to preview the text by creating a question to guide their reading process and activating their background knowledge. Questions and directions for the *1st reading* section are intended to guide readers to read for main ideas and overall structures. By implementing "rhetorical reading" (e.g. Carrell and Conner, 1991), the questions also ask learners to be deliberately aware the rhetorical structures and rhetorically important concepts such as the thesis statement and paragraphs.

The directions for the *2nd reading* section are to ensure that learners are reading for details and performing efficient bottom-up processing (e.g. Grabe and Stoller, 2002, p.32). At this stage, the focus is still on content comprehension. First, phrase as the unit of comprehension is proposed for learners. According to Kadota and Tada's experiment (1992), using the phrase as a processing unit seems to promote the most effective comprehension. In their experiment, they divided participants into three groups and showed an English text word-by-word, phrase-by-phrase, and sentence-by-sentence, respectively. Participants were later asked to recall as much information as possible from the text. The results showed that participants in the group which had processed the text by using the unit of phrase comprehended more than participants who had processed it using the unit of sentence or word. Therefore, checking learners' understanding after each phrase is encouraged in the question of the checklist used in this research. Next, learners are encouraged to find the subject and the predicate verb in each sentence. This question is intended to ensure learners' considering of the basic structure of English, which is different from that of Japanese. Then, learners are encouraged to check their understanding after each sentence. In this way, learners' bottom up processing is supported by the directions in the *2nd reading* section. Up to this stage, the purpose of reading is to comprehend the text fully.

The *3rd reading* is the implementation of "mining"(e.g. Greene, 1993) and "reading for revision"(e.g. Hayes, 1996). It is intended to provide readers with opportunities to reflect on expressions and language form. In order to make the directions in the checklist general rather than specific for repeated use, general terms such as word form or verb tense are used. In addition to important words for understanding the content of the text or for identifying the rhetorical information, form of words and grammatical structure are included in the checklist because learners are not likely to shift conscious attention to these aspects without explicit directions. Learners are asked to check verb tense and voice. The reason is that verb tense and verb voice are difficult especially for Japanese learners to acquire because Japanese and English employ different systems to indicate these. Paying attention to collocation is another difficulty for many Japanese learners. They have to learn these consciously from their reading practice. In addition, consulting a dictionary is recommended in the direction at this stage as is in Kennedy and Smith (2006, p.40). The purpose of this is to encourage learners to take time and check language form, meaning, and use. It is an important strategy for L2 and FL writers to employ as well as L1 writers who are in reading for revision.

Questions in the *after reading* section are to encourage learners to identify the rhetorical context of the reading text and the text they are creating. Reading for the rhetorical context of the text means to read for "an author's attempt to use language to achieve an intended effect on an audience" (Kennedy and Smith, 2006, p.31) by

considering "the author's purpose and motivation for writing the text, the intended audience, the circumstances surrounding the text's production, the author's position toward other writers and other texts, and the larger conversation of which the text is part" (p. 31). The rhetorical context of their own text means the rhetorical context of their own reading-to-write task. Learners need to consider their own purposes of reading and evaluate a text in terms of the relevancy, validity, and importance of information. Important theories and approaches in writing such as social cognitive theory (e.g. Flower, 1994) and genre approach (e.g. Hyland, 2004) encourage learners to consider social aspects of writing. Reconstructing the context of a reading text is important to fully comprehend the text and to experience the author's decision-making in producing the text. In addition, considering learners' own context is important so that reading is contextualized in a reading-to-write task effectively and efficiently. Some questions are meant to serve as a bridge between reading texts and the texts learners are to create. In the checklist in the appendix, however, no specific writing task is mentioned. Learners are asked for their opinions and asked to compare their opinions with the author's. This is intended to stimulate learners to personalize the issues in the reading text. Another motivation for the inclusion of this question is that in a pilot study some learners were confused in writing their papers after being exposed to a related text because they failed to integrate ideas from their own background knowledge with the ideas from the reading material. An explicit instruction to compare their ideas with those in reading texts may help these learners sort out similarities and differences between them. The final question asks learners to consider possible topics for their own writing. The reason for this inclusion is to encourage learners to anticipate the possibility of creating their own texts, which may promote learners' shifting more attention toward language form (e.g. Yoshimura, 2006).

III. Quasi-experiment

Effects of connecting reading and writing and effects of the checklist were investigated by conducting a quasi-experiment. The research questions for this quasi-experimental research are the following. While questions 1 and 2 ask the effects of connecting reading and writing rather than directly examining the effects of the checklist, questions 3, 4, and 5 ask the effects of the checklist itself.

1. Research questions

Research question 1: Whether and how connecting reading and writing affects EFL learners' behaviour.
Research question 2: Whether and how reading a relate text affects EFL learners' writing performance.
Research question 3: Whether and how the checklist affects EFL learners' reading behaviour.
Research question 4: Whether and how the checklist affects EFL learners' writing behaviour.
Research question 5: Whether and how the checklist affects EFL learners' writing performance.

2. Participants

Participants for this research were forty two juniors and seniors majoring in English in a Japanese university from two English writing classes. Their age range was twenty to twenty-two and their English proficiency ranged from 400 to 600 in TOEIC scores. The research was conducted on the first and second days of their writing classes. The writing and reading tasks were given as parts of diagnostic tests for the class.

3. Research design

Quasi-experimental design was used in this research because it uses "situations which already exist in the real world and are probably more representative of the conditions found in educational contexts" (Seliger and Shohamy, 1989, p.148). Two groups consisted of already existing two writing classes. One group would serve as the experimental group (EG) and the other group would serve as the control group (CG). There were sixteen students in EG and twenty-six students in CG. Because two groups consisted of already existing classes, there was unbalance in the number of students between the two groups. Students in EG group were given a reading task with the checklist, while students in CG group were given a reading task without the checklist. Before and after the reading task, writing tasks were given, which would serve as pre- and post-tests in this research. After the second

writing task, a survey was conducted to investigate the students' self-analysis of their own reading and writing behaviours (retrospection).

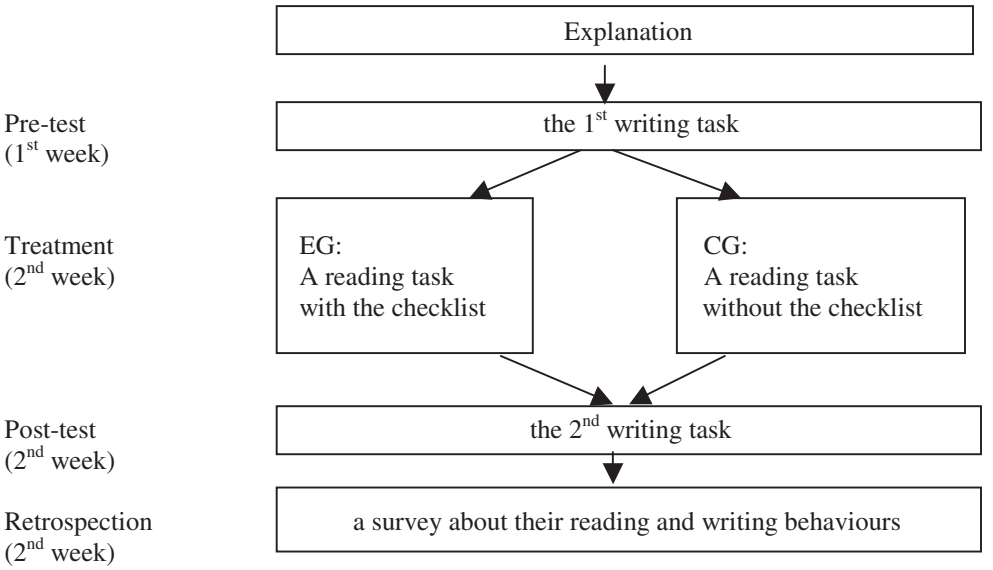

Fig 1. Research design

4. Procedures

On the first day, the students were told that they would have diagnostic tests on the first and second days of the class. No specifics were given about the diagnostic tests. Then the first writing task was given to the students as a diagnostic test. Students were asked to write an English essay about the topic "Why should we Japanese study English?" in 30 minutes. Specifically, the prompt says as follows: "Why should we Japanese study English? It is an important question all English learners need to ask themselves. As an English teacher, I would like to know your opinion. Please tell me why you think we Japanese should study English. Please support your opinion by specific reasons and examples."

Then one week later, on the second day of the writing class, students were asked to read a related English text entitled "Is English the world's most common language?" (Ishitani, Wallis and Embury, 2008) at their own pace. Students in EG group read the text with the checklist, while students in CG group read the text without the checklist. Then they were given the second essay task without prior notice. The topic of the second writing task was slightly different but almost the same compared with the first writing task. Specifically the prompt says as follows: "Now after reading the text, why do you think we Japanese should study English? Write your opinion in English. Support your opinion by specific reasons and examples." Finally, students were asked to fill in a survey to analyze their own reading and writing behaviours.

The questions in the survey for EG were if the checklist helped their reading, how reading affected their writing, how they performed the writing task, how the process and performance differed between the first and second writing tasks, and so on**.** The questions in the survey for CG were how many times they read the text, how they processed the reading text each time, what was the unit of their reading process, how reading affected their writing, how they performed the writing task, how the process and performance differed between the first and second writing tasks and so on (See appendix 2).

5. Analysis Procedure

To investigate research question 1, quantitative and qualitative analyses were conducted with Q2, Q3, Q4, and Q6 in the survey for EG and with Q4, Q5, Q6, and Q9 in the survey for CG.

To investigate research question 2, quantitative analyses were conducted on the change of performance in participants' writing samples for the pre- and post-tests. First, an evaluation sheet was created by integrating various ESL composition profiles (e.g. ETS, 2007; Jacobs, Zingraf, Wormuth, Hartfiel, and Hughey, 1981) and social considerations of writing (e.g. Matsuda, 2008). (See appendix 3) The evaluation sheet uses analytic evaluation and has six categories: genre consideration, content, macro structure, micro structure, language range and complexity, and language errors. Next, the writing samples from pre- and post-tests were evaluated by two experienced English teachers using the evaluation sheet. They were native English teachers who had taught English and English writing to Japanese students for several years. The writing samples, i.e. pre- and post-tests from the same students were paired. The paired writing samples from two groups were randomized before they were handed out to the evaluators. The scores from the two evaluators were averaged. The scores from the pre- and post-tests were analyzed using paired t-tests for the changes between the two tests for EG and CG separately.

To investigate research question 3, Q1 and Q9 in the survey for EG and Q1, Q2, and Q3 in the survey for CG were used for qualitative and quantitative analysis.

To investigate research question 4, qualitative and quantitative analyses were conducted with Q5, Q7, and Q8 in the survey for EG and CG.

To investigate research question 5, the change of scores between pre- and post-tests in different categories was calculated for EG and CG respectively. Then, the scores in corresponding categories between EG and CG were compared using independent t-test.

6. Results

Regarding research question 1, connecting reading and writing seems to have affected in various ways. First, writing before reading seems to have influenced students' reading behaviour positively. Nineteen (46%) students answered that writing before reading the text had helped them compare their ideas with the ideas in the reading text. Some noticed the difference between their rhetorical structures and the reading text's structure and found that the reading text was well-organized. Some found English expressions in the reading text which they had wanted to use in writing their first essays. Second, reading before writing also seems to have had positive effects on students' writing behaviour. Thirty out of forty two students (71%) answer that reading before writing helped their writing behaviour. Twenty nine students (69%) used content information from the text in their writing, thirteen students (31%) used information about rhetorical organization, and twelve students (29%) used words and expressions from the reading text. Thirteen students (31%) changed their thoughts on the issue after reading the text. Thus, in general, connecting reading and writing itself seems to have positive effects on students' process and behaviour. However, some students were overwhelmed by trying to integrate background knowledge with textual knowledge and performed worse in the second writing.

Regarding research question 2, reading a related text seems to have contributed to improving students' writing performance. Table 1 and 2 show the mean and standard deviations of the pre- and post-test scores for EG and CG, respectively. The total score for each category is 10. As the table 1 and 2 show, students' performance, regardless of the group, significantly improved after the reading task.

Table 1. Mean scores and standard deviations of the pre- and post-tests for EG

	EG (N=16)		
	Pre-test	Post-test	
	Mean (SD)	Mean(SD)	Significance
Genre consideration	7.00 (.88)	7.53 (.92)	t(15)=3.44, p=.004, r=.66
Content	6.47 (1.15)	7.19 (.89)	t(15)=4.37, p=.001, r=.75
Macro-structure	6.69 (.85)	7.16 (.87)	t(15)=2.91, p=.011, r=.60
Micro-structure	6.31 (.96)	6.94 (.91)	t(15)=4.44, p=.000, r=.75

Language complexity	6.09 (.71)	6.69 (.77)	t(15)=5.22, p=.000, r=.80
Language error	6.09 (.71)	6.50 (.68)	t(15)=3.57, p=.003, r=.68

Table 2. Mean scores and standard deviations of the pre- and post-tests for CG

	CG (N=26)		
	Pre-test	**Post-test**	
	Mean (SD)	**Mean(SD)**	**Significance**
Genre consideration	6.71 (.74)	6.90 (.66)	t(25)=2.18, p=.039, r=.40
Content	6.19 (1.04)	6.60 (.81)	t(25)=3.43, p=002, r=.57
Macro-structure	6.13 (.98)	6.57 (.83)	t(25)=3.95, p=.001, r=.62
Micro-structure	5.92 (.97)	6.33 (.88)	t(25)=3.10, p=.005, r=.53
Language complexity	5.69 (.83)	6.07 (.80)	t(25)=3.80, p=.001, r=.48
Language error	5.63 (.81)	5.92 (.84)	t(25)=3.43, p=.002, r=.57

Regarding research question 3, the checklist seems to have helped the students' reading comprehension in various ways. In answering Q1, all the students in EG answered that questions and directions in the checklist had helped their text comprehension. Specifically, eight participants commented on their reading process and wrote, "Thanks to the checklist, I learned how to proceed the reading task.", "Because the reading process was divided into three stages, I understood the text better." and so on. Five participants mentioned attention allocation and wrote, "The checklist helped my comprehension by directing my attention to specific information at each stage." Three participants attributed ease of comprehension to paying attention to rhetorical aspects such as rhetorical organization and thesis statement. One participant wrote that he had been able to pay more attention to syntactic and lexical information with the checklist. To Q9, all except two participants (88%) answered this way of reading was different from their usual way of reading. Seven wrote that they usually read a text only once but carefully. Four wrote that they usually read twice, first time for the main ideas and second time for the details. One wrote that she had never read a text thinking that she might find useful expressions for her future writing.

Answers and comments in the survey for CG supported that the way of reading guided in the checklist is not very common with Japanese college students. To Q1, which asks the number of times the text was read, seven (28%) answered once, nine (36%) answered twice, eight (32%) answered three times, and one (4%) answered four times. To Q2, participants who had read the text once said that they had read it slowly and carefully. Participants who had read the text twice said that they had read it quickly for the main idea and then they had carefully reread it for the details. Most of the participants who answered three or four times had read the text quickly for the main idea, carefully for the details, and then checked their comprehension. One student who had read the text three times answered that she had paid attention to the rhetorical structure in the third reading for her future usage. The units of comprehension they usually use seem to be different from the units of comprehension used in the checklist. That is, to answer Q3, six (23%) wrote they had used word, eight (31%) had used phrase, seventeen (62%) had used clause, sixteen (62%) had used sentence, sixteen (62%) had used paragraph, and nine (35%) had used the whole text as the unit of comprehension. Thus, they mainly use the units of clause and sentence, not the units of phrase very much. Thus, the retrospective survey reveals that the way of reading guided by the checklist was different from students' usual way of reading in the number of times they read a text, in the way they process an English text, and in the units of comprehension, and that this way of reading helped their reading comprehension.

Regarding research question 4, few students consciously used the questions and directions in the checklist in the second writing task. Only four students in EG (25%) answered they had used the questions in the checklist: two had used the checklist to guide their writing processes and two had consciously used questions about rhetorical structures. Question about writing process reveals that students in both EG and CG followed similar process: Most started with thinking about the thesis, then thinking about reasons for the thesis, and then how to conclude the paper. Comparison between the first and second writing reveals that students in EG rather than CG used the input from the reading text more smoothly and effectively to help their writing. For example, all but one students (93%) in EG answered the second writing task had been easier because they had more content to include, expressions to use, or learned a rhetorical structure to follow. On the other hand, seven students (27%) in CG answered that the second writing had been the same or worse compared with the first writing. Three answered their writing had been almost the same. Four answered their performance had been worse because they had been confused trying to integrate their

thoughts and information from the reading text. Thus, more students in EG than students in CG seem to have contextualized reading in their writing process effectively.

To investigate research question 5, whether the checklist helped learners' writing performance, the change of the evaluation scores from the pre-test to the post-test was compared between groups. EG performed better than CG in the gain of the scores in all categories. However, as Table 3 demonstrates, only genre consideration showed statistically significant difference.

Table 3. Mean scores and standard deviations of the change from pre- and post-tests for EG and CG

	EG (N=16) Mean (SD)	CG (N=26) Mean(SD)	Significance
Genre consideration	+.53 (.62)	+.19 (.45)	t(40)=2.05, p=.046, r=.31
Content	+.72 (.66)	+.40 (.60)	t(40)=1.59, p=.119, r=.24
Macro-structure	+.47 (.64)	+.44 (.57)	t(40)=.139, p=.890, r=.02
Micro-structure	+.63 (.56)	+.40 (.66)	t(40)=1.11, p=.274, r=.17
Language complexity	+.59 (.46)	+.38 (.52)	t(40)=1.33, p=.190, r=.21
Language error	+.41 (.46)	+.29 (.43)	t(40)=.845, p=.403, r=.13

7. Discussions

First of all, the results of the experiment provide an important finding: i.e. the importance of connecting reading and writing. About half students answered that writing their thoughts on the issue before reading had prompted them to compare their ideas and ideas in the text, to pay closer attention to the rhetorical structure and expressions in the reading material. In addition, most students, regardless of the groups, performed better in all the categories in the second writing task than in the first writing task. When asked the effects of reading on the subsequent writing, students answered that they had received various input from reading such as content information, information about rhetorical organization, and English expressions and the language forms. Thus, in general, reading a related text before writing seems to have positive effects on learners' subsequent writing process and performance. The text used in the experiment had typical expository structure and just to be exposed to a text with good organization seems to help learning about writing. However, we should not ignore the fact that some learners were overwhelmed by trying to integrate their original ideas and ideas from the reading text.

Secondly, regarding the effects of the checklist on students' reading processes, all the students who had used the checklist answered that it had helped their reading comprehension. From the students' retrospective survey answers, the way of reading EG students were guided by the checklist was different from their usual reading process. Not all students usually read texts more than once, and even when they reread a text, they do not pay conscious attention toward rhetorical organizations or language forms. Their main concern is to comprehend the content of the text deeply. This is consistent with the finding from Van Patten's research (1990). The checklist directs the users to pay attention to not only content but rhetorical structures and language forms. In addition, their usual units of reading are mainly clauses or sentences. However, as Kadota and Tada's research (1992) demonstrates, using phrase as a processing unit promotes most effective comprehension. The checklist guides the users to check their comprehension after each phrase. Because of the above differences, students may have had the impression that the checklist promoted their reading comprehension.

Few students, however, answered that they had used the questions and directions in the checklist in writing their texts. Comparing the change of performance from the first to the second writing task between EG and CG reveals that both groups gained significantly from the reading activity. But comparison between groups in the change of the writing performance did not reveal significant difference. The only way the checklist had statistically significant effect on writing performance was in genre consideration, which is about relevance to the assigned topic and consideration of audience and genre. However, the fact that fewer students in EG than CG were confused in the second writing task seems to suggest that guiding learners through their reading process with the checklist may have helped students connect reading and writing tasks efficiently. In addition, though the between-group comparison failed to reach statistical significance, EG group consistently outperformed CG group in the change of writing performance. It may indicate that the checklist supported students' learning about English writing which had already been made possible by being exposed to the related reading texts.

IV. Conclusion

The purposes of this research were to investigate 1) effects of connecting reading and writing and 2) effects of a checklist to guide the reading process, on EFL learners' reading and writing processes and performance. A quasi-experiment was conducted using learners from two writing classes. The following is the summary of findings:

1. Connecting reading and writing seems to affect EFL learners' behaviour positively. While writing can affect the subsequent reading by activating their schema, reading can affect the subsequent writing by providing valuable input.
2. Reading a related text seems to contribute to improve EFL learners' subsequent writing performance significantly.
3. The checklist seems to help EFL learners' reading comprehension and influence their reading process.
4. The checklist does not seem to affect EFL learners' writing behaviour significantly.
5. The checklist seems to support learners' writing performance slightly by helping them integrate background knowledge and textual knowledge effectively and by having them consider the genre.

Thus, connecting reading and writing in itself contributes to EFL learners' learning about English writing. The importance of reading in writing instruction has been acknowledged by researchers of reading and writing (e.g. Carson and Leki, 1993; Grabe, 2001; Hirvela, 2004) and ways of reading which are likely to support learners' learning about writing have been proposed (e.g. Greene, 1993; Hayes, 1996). However, there is not enough empirical support for the proposals. The current research will give empirical support for the proposed ways of reading. The improvement in the second writing task over the first writing task seems to be attributed to connecting reading and writing rather than the effects of the checklist. However, the checklist at least seems to help learners consider genre and integrate reading and writing processes efficiently.

This research has various limitations and the following points need to be considered in interpreting the results:

1) The sample size is rather small, which should be considered in the generalization of the research results.
2) Greater impact of connecting reading and writing rather than the impact of the checklist was found. This may be because the text was easy to understand and had a clear rhetorical structure. Therefore, to be exposed to such a text may in itself have helped students' learning about writing. The checklist may have more impact on learners' reading processes if it is used to read a text which is more difficult or complicated.
3) As Smagorinsky (1992) says, it takes time and practice to learn. The effects of the checklist need to be measured by a delayed post-test after sufficient practice is given. In this research, a delayed post-test was not conducted.
4) What to include in the checklist was decided by integrating findings from reading and writing research and the results of a pilot study. The validity of the choice, however, has not been fully examined. Studies with different items need to be conducted to further investigate the validity.
5) The writing performance was measured by evaluation criteria created by the author. Again, the validity of the criteria needs to be examined further.

Despite the numerous limitations, this study empirically demonstrated significant effects of connecting reading and writing and, though the effects were limited, beneficial effects of the checklist on EFL learners' learning about English writing.

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Appendix 1

Checklist for reading English academic texts

Before you read: Survey the title, headings, and the beginning and ends of the paragraphs and ask yourself the following questions.

1. What do you think the text is about?
2. Call up your prior knowledge and feelings about the topic.

1st reading: Read the text paragraph by paragraph in order to find the overall structure.

3. Where is the thesis statement in the introduction?
4. What does each paragraph tell you? Check your understanding after each paragraph.
5. Find topic sentence and supporting sentences in each paragraph.
6. How has the author organized his or her ideas? How are the paragraphs related to each other?
7. What is the conclusion?

2nd reading: Read the text carefully in order to understand the details.

8. Read the text phrase by phrase. Check your understanding after each phrase.
9. Check for the predicate verb and the subject in each sentence.
10. Check your understanding after each sentence.

3rd reading: Take your time and check the language form. Consult a dictionary if necessary.

11. Find the key words to understand the text.
12. Find words which show the development of the text and relationships between sentences.
13. Check for the word choice.
14. Check for the word form and grammatical structure.
15. Check for the verb tense and verb voice.
16. Check how the words are combined with each other (collocation).
    e.g. verb and preposition, verb and noun, adjective and noun, preposition and noun, etc.

After reading: Identify the rhetorical context of the text and your own reading.

17. For whom do you think the author is writing the text?
18. For what purpose do you think the author is writing the text?
19. Do you have any opinions about the ideas presented in the text? How are they similar or different from the author's?
20. If you wrote a paper about the issue presented in the reading material, what would you write about?

Appendix 2

Survey about the diagnostic tests for EG

1. Did the checklist help your reading comprehension? →(Yes No) If you answered yes, how did it help you?
2. Did the first writing task affect your reading? →(Yes No) If you answered yes, how did it affect your reading?
3. Did the reading task affect your second writing? →(Yes No) If you answered yes, how did it affect your second writing?
4. Did you use the information from the reading text in your second writing? →(Yes No) If you answered yes, what information did you use? (facts, expressions, rhetorical structures, etc.)
5. Did you use the questions and directions from the checklist in your second writing? →(Yes No) If you answered yes, how did you use them?
6. Did the reading text affect your ideas about why we Japanese should study English? →(Yes No) If you answered yes, how did it affect your ideas?
7. How did you perform your second writing task? Write what you did in detail. Write not only what you physically did but what you paid attention to in your writing process.
8. Compare your first and second writing process and performance. How did they differ and why?
9. You were asked to read the text three times with the checklist. Was it different from or similar to your usual reading process?
10. If you have taken some tests which show your English proficiency, write the test name(s), the grade or score, and the year you took it.

Survey about the diagnostic tests for CG

1. How many times did you read the text?
2. How did you read the text each time? What did you pay attention to each time?
3. How did you process the text when you read the text? Circle all the units you use in reading the text. (word, phrase, clause, sentence, paragraph, the whole text)
4. Did the first writing task affect your reading? →(Yes No) If you answered yes, how did it affect your reading?
5. Did the reading task affect your second writing? →(Yes No) If you answered yes, how did it affect your second writing?
6. Did you use the information from the reading text in your second writing? →(Yes No) If you answered yes, what information did you use? (facts, expressions, rhetorical structures etc.)
7. How did you perform your second writing task? Write what you did in detail. Write not only what you physically did but what you paid attention to in your writing process.
8. Compare your first and second writing process and performance. How did they differ and why?
9. Did the reading text affect your ideas about why we Japanese should study English? →(Yes No) If you answered yes, how did it affect your ideas?
10. If you have taken some tests which show your English proficiency, write the test name(s), the grade or score, and the year you took it.

Appendix 3

Evaluation Sheet

Please use the following criteria and evaluate the compositions.

Genre consideration

level	criteria
9-10	**Excellent to good:** relevant to the assigned topic, shows consideration of audience and genre
7-8	**Good to average:** mostly relevant to the assigned topic, shows some consideration of audience and genre
5-6	**Fair to poor:** not very relevant to the assigned topic, not show consideration of audience and genre very much
1-4	**Very poor:** not relevant to the assigned topic, not show consideration of audience and genre at all, Or not enough to evaluate

Content

level	criteria
9-10	**Excellent to good:** knowledgeable, substantive, thorough development of thesis
7-8	**Good to average:** some knowledge of the subject, adequate substance, limited development of thesis
5-6	**Fair to poor:** limited knowledge of the subject, little substance, inadequate development
1-4	**Very poor:** not show knowledge of the subject, non-substantive, Or not enough to evaluate

Macro structure

level	criteria
9-10	**Excellent to good:** idea clearly stated and supported, well-organized, logical sequencing
7-8	**Good to average:** loosely organized but main ideas stand out, somewhat logical
5-6	**Fair to poor:** ideas confusing or disconnected, lacks logical sequencing
1-4	**Very poor:** does not communicate, no organization, Or not enough to evaluate

Micro structure

level	criteria
9-10	**Excellent to good:** fluent flow, detailed description
7-8	**Good to average:** somewhat fluent flow, somewhat detailed description
5-6	**Fair to poor:** choppy, ideas not connected well, few or no details
1-4	**Very poor:** does not communicate, Or not enough to evaluate

Language range and complexity

level	criteria
9-10	**Excellent to good:** effective complex construction, sophisticated range of vocabulary, effective word/idiom choice and usage
7-8	**Good to average:** effective but simple construction, adequate range of vocabulary, somewhat effective word/idiom choice and usage
5-6	**Fair to poor:** limited range of construction and/or vocabulary
1-4	**Very poor:** no mastery of sentence construction and/ or little knowledge of vocabulary, Or not enough to evaluate

Language errors

level	criteria
9-10	**Excellent to good:** Few errors in sentence constructions and/or word choice/form
7-8	**Good to average:** minor problems in sentence constructions and/or word choice/form
5-6	**Fair to poor:** major problems in constructions and/or word choice/form
1-4	**Very poor:** no mastery of English construction and/or vocabulary, Or not enough to evaluate